

Notice of Allowability

Application No.	Applicant(s)
09/390,501	BATZ ET AL.
Examiner	Art Unit
Brian L. Mutschler	1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 10 May 2004
2. ☒ The allowed claim(s) is/are 3, 5 and 6.
3. ☒ The drawings filed on 02 July 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f)
 - a) ☐ All b) ☐ Some* c) ☐ None of the
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
 Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
 of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
 Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the specification:

- a. In the amendment submitted on January 25, 2001, on page 2 at line 6, please insert --now US Patent 6,274,013, -- before "which" at the end of the line.

In the claims:

- a. In claim 3 at line 4, please insert --a workpiece holder configured to hold a workpiece face down;-- before the phrase "a plurality of electrical contacts".
- b. In claim 3 at line 8, please insert --below the face of the workpiece-- after "downward".

The changes to the claims indicated above incorporate proposed amendment submitted May 10, 2004. The changes are made by Examiner's amendment because the proposed amendment does not include all of the claims and cannot be entered. The

status of all claims must be indicated, e.g., claims 1 and 2 should have been indicated as cancelled.

2. The following is an examiner's statement of reasons for allowance:

The instant invention is distinguished over the prior art of record by providing a combination neither taught nor disclosed by the prior art of record. The novel combination comprises a plurality of electrical contacts having a first section projecting generally downward below the face of the workpiece and a second section that projects inwardly and a yieldable sealing system proximate the electrical contacts and configured to press against the surface of the workpiece and inhibit processing fluid from contacting the contact faces of the contacts.

In U.S. Pat. No. 5,429,733, Ishida discloses a contact assembly having a contact **21** that projects downward and inward and also has a elastic member **5** (see US '733, fig. 4). However, the downwardly projecting section of the contact **21** does not project below the face of the workpiece. Also, Ishida states, "The tip ends of the cathode electrodes **21** are exposed on the upper surface of the elastic member (see US '733, col. 4, lines 18-20). Although Ishida teaches other contact embodiments where the elastic member **5** prevents contact with the plating fluid, Ishida does not provide such a teaching for the wire-like contacts **21**.

Contacts having sections that project downward below the surface of a workpiece are taught by Yee et al. (U.S. Pat. No. 5,078,852) and Andricacos et al. (U.S. Pat. No. 5,522,975). Yee et al. teach the use of contacts with pointed tips to make

contact with the workpiece (see US '852, figs. 1 and 2). However, Yee et al. makes no attempt to inhibit plating solution from touching the contact. Yee et al. teach that the contact should be made of an inert material such as titanium so that electroplated copper can be etched back (see US '852, col. 4, lines 17-20). Andricacos et al. teach the use of a contact **52** that projects downward and then inward to make contact with the workpiece (see US '975, fig. 9). The contact **52** is covered with a dielectric material that covers all of the contact except for the tip (see US '975, col. 6, lines 24-28).

Although the prior art of record teaches each of the elements recited in the instant claims, the combination of elements would not have been obvious to one of ordinary skill in the art at the time the invention was made. The contact assemblies taught by Yee et al. and Andricacos et al. have no need for yieldable sealing systems because they provide for alternative means for protecting the contacts, i.e., by using inert materials that resist etching and through a dielectric cover. Modifying the contacts of Ishida to project below the face of the workpiece would also not have been obvious because the contacts **21** are formed on the elastic member **5** and would therefore be supported by the elastic member. While Yee et al. and Andricacos et al. teach that projecting the contacts downward and inward to establish a connection with the workpiece provides a good, uniform contact with the workpiece, one skilled in the art would not have modified the contacts of Ishida because making such a modification would alter the function and relationship of the structural elements of the contact assembly.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Mutschler whose telephone number is (571) 272-1341. The examiner can normally be reached on Monday-Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BLM
May 27, 2004



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SUPERVISORY PATENT EXAMINER
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